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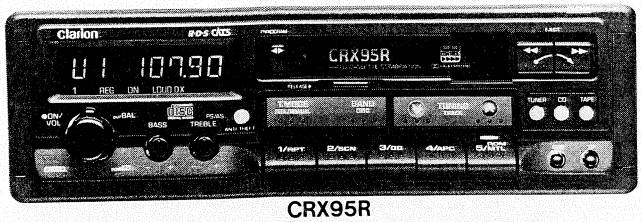
clarion Service Manual

Published by Service Engineering Section



CRX95R

CRX85R

RDS/FM•MPX/MW/LW RADIO CASSETTE COMBINATION WITH CD CHANGER CONTROL

Model CRX95R
(PE-9438C)

Model CRX85R
(PE-9586C)

	CRX95R	CRX85R
CD Changer Control	○	×
Portable CD Input	×	○

■SPECIFICATIONS:

Radio section

Circuit system: Superheterodyne
Tuning system: Electronic tuning
Receiving frequency: LW 153kHz to 281kHz
MW 531kHz to 1,602kHz
UKW(FM)
87.5MHz to 108MHz
Intermediate frequency:
LW, MW 450kHz
UKW(FM) 10.7MHz

Tape section

Reproduction system:
Auto reversing
4 track, 2 channel stereo
cassette tape playback
(Monaural also capable)
Tape speed: 4.76cm/sec. (1-7/8 ips)

Composite

Load impedance: 4Ω×4
Power output: 15W×4
Power supply voltage:
DC 14.0V
(10.8V to 15.6V)
Negative ground
Power consumption: Less than 10A
(at max. output)
Dimensions: Width 178mm
Height 50mm
Depth 160mm
Weight: 1.7kg

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- "DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

■COMPONENTS:

- **CRX95R (PE-9438C-B)**
- **CRX85R (PE-9586C-B)**

Main unit		1
Mounting bracket	300-6954-00	1
Mounting bracket	300-9035-01	1
Extension lead	854-1877-00	1
Parts bag	921-8601-01	1
{ Removal tool	341-1387-01	1
Parts bag	921-8735-01	1
{ Spacer	345-3653-01	1
{ Tap screw	700-5016-80	1
{ Screw	716-0726-01	1
{ Nut	722-0314-00	1
{ Plate nut	725-0216-00	1
Parts bag	921-8803-01	1
{ Sticker	291-0051-00	1
{ DCP case	346-0071-00	1
Parts bag	921-9061-00	1
{ Outlet socket	074-0919-00	1
{ A-lead	850-2600-00	1

■FEATURES:

- RDS (Radio Data System): PI (Programme Identification), AF (Alternative Frequency), TP (Traffic Programme Identification), TA (Traffic Announcement), PS (Programme Service name), REG (Regional Selection)
- One-touch Memory (10 FM, 5 MW/LW)
- Tuning Modes: Manual Tuning and Station Seek
- Preset Scan (PS) & Auto Store (AS) on FM/MW/LW
- Key-Off Pinch Roller Release
- Dual Azimuth Adjustment Mechanism
- 70 μsec. Tape Equalization Selector (MTL)
- APC (Automatic Programme Control)
- Dolby B Noise Reduction
- Loudness Switch
- Maximum Power Output: 15 W×4
- 4-Channel Line-Out
- CD Changer Control (CRX95R)
- CD Input Mini-jack (CRX85R)
- Detachable Control Panel

■CATS III (Computer Anti-Theft System III):

Operation

[1] Entering the CATS Code

1. Turn the power off by turning the ON/VOL knob ① fully counter-clockwise.
2. Press the TP switch ⑰, and while keeping it pressed, turn the ON/VOL knob ① clockwise to turn on the power.

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CODE IN

Digital Display

"CODE IN" starts blinking on the display.

3. Input an arbitrary 4-digit number using the Preset buttons (1 to 5) ⑲.

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1234

(Example) Input 1-2-3-4

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CODE IN

"CODE IN" starts blinking again.

4. Input the same four digits again.

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1234

(Example) Input 1-2-3-4

The CATS code input is completed. Now the unit will operate normally.

When the second input of the CATS code has been correctly done, the CATS code is registered. After "CATS ON" has been displayed, the power to the unit will be switched on.

Notes:

1. In case you have input a wrong 4-digit number in step 3:
   If, for example you input 2-2-3-4 instead of 1-2-3-4, input any 4-digit number other than 2-2-3-4 in step 4. The unit will then return to the condition in step 2, where the "CODE IN" blinks on the display. Continue by keying in the correct CATS code.
2. If the input numbers in steps 3 and 4 do not match:
   If you input, for example, 1-2-3-4 in step 3 and then 2-2-3-4 in step 4, the unit will return to its original condition. Continue with steps 3 and 4.
3. In case you realise your mistake before entering all 4 digits in step 3 or 4, enter any digits to complete the entry. Then proceed as explained in notes 2 or 3 above.
   Proceed in the same way to correct input mistakes made during [2] Releasing CATS or [3] Erasing or Changing the CATS Code.

[2] Releasing CATS (when you have removed the car stereo or sent the car for servicing)

1. Turn the power on by turning the ON/VOL knob ① clockwise.

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CODE IN

Digital Display

"CODE IN" starts blinking on the display.

2. Input your CATS code.

clarion

1234

(Example) Input 1-2-3-4

[3] Erasing and Changing the CATS Code

1. Turn the power off by turning the ON/VOL knob ① fully counter-clockwise.
2. Press the TP switch ⑰, and while keeping it down, turn the ON/VOL knob ① clockwise to turn on the power.

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CODE IN

Digital Display

"CODE IN" starts blinking on the display.

3. Input your CATS code.

clarion

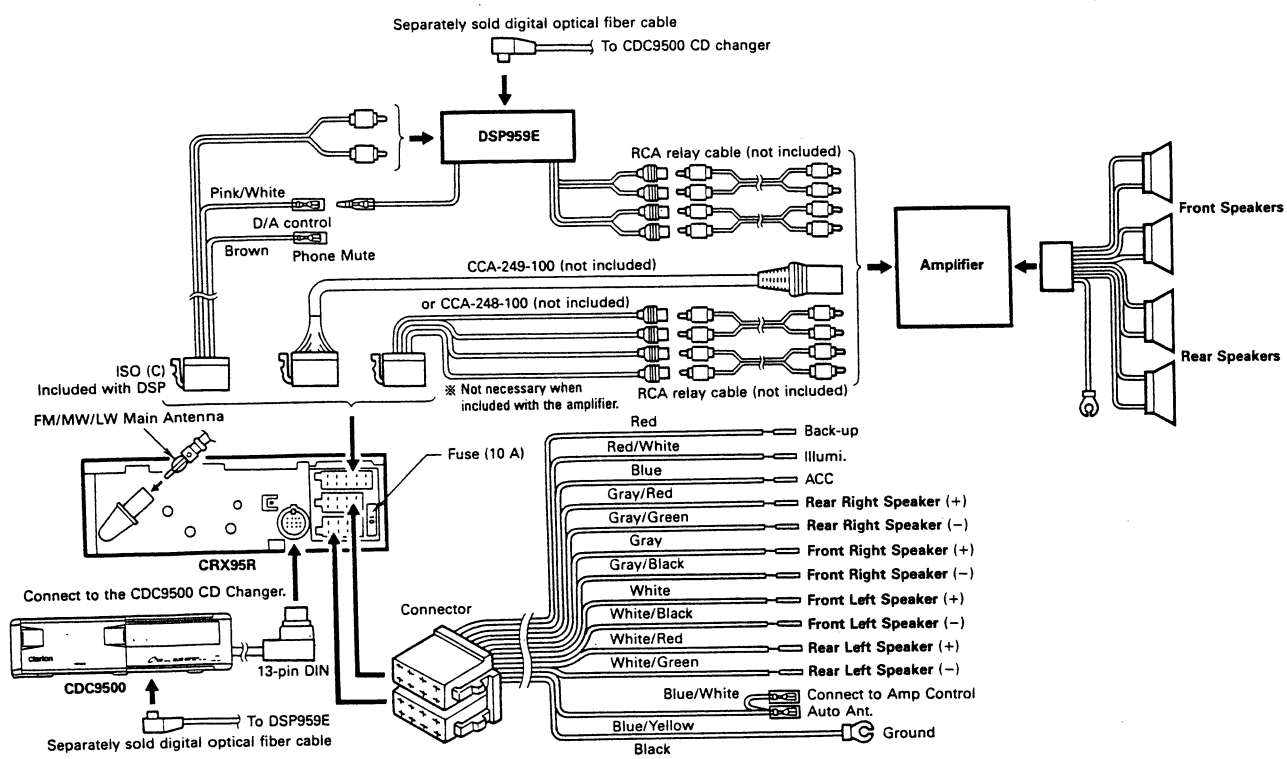
1234

The CATS code has now been erased, and the unit will operate normally.
To input a new CATS code, follow the steps in [1] Entering the CATS Code.

When the erasure of the CATS code has been completed, "CODE CLR" will be displayed. After this the power to the unit will be switched on.

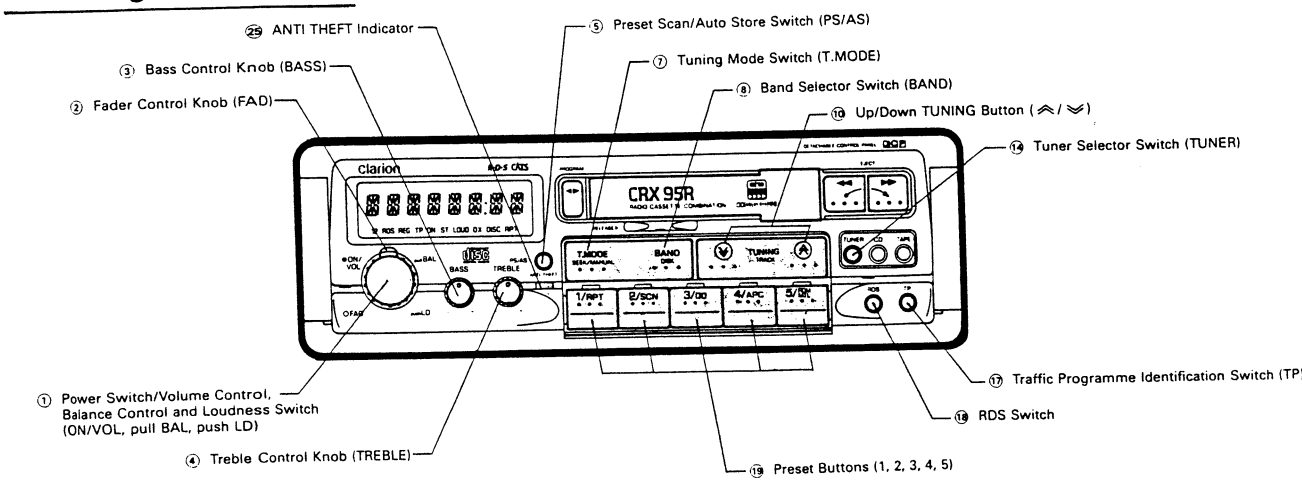
Note: In case you input a wrong CATS code in step 3, the unit will return to the condition after step 1, so continue with steps 2 and 3.

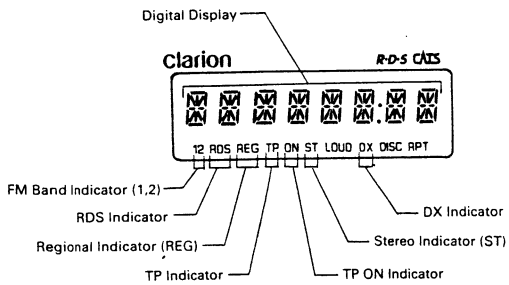
■WIRE CONNECTION:



■OPERATION:

Listening to the Radio


㉙ ANTI THEFT Indicator
⑤ Preset Scan/Auto Store Switch (PS/AS)
③ Bass Control Knob (BASS)
⑦ Tuning Mode Switch (T.MODE)
② Fader Control Knob (FAD)
⑧ Band Selector Switch (BAND)
⑩ Up/Down TUNING Button (≪ / ≫)
⑭ Tuner Selector Switch (TUNER)
CRX 95R
⑰ Traffic Programme Identification Switch (TP)
⑱ RDS Switch
① Power Switch/Volume Control, Balance Control and Loudness Switch (ON/VOL, pull BAL, push LD)
④ Treble Control Knob (TREBLE)
⑲ Preset Buttons (1, 2, 3, 4, 5)



■ Using the Radio Data System (RDS)

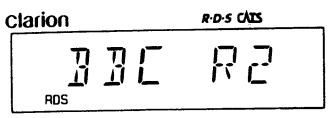
✱ RDS Switch ☛ 18

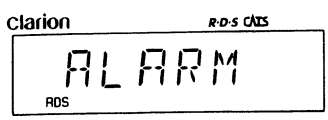
- This switch is off when the unit is turned on for the first time.
- RDS only works on the FM band.
- When the RDS switch is switched on, "RDS" is displayed.

1. When an RDS broadcast station is received, the name of the received station will be displayed (PS: Programme Service name).
2. If the receiving conditions worsen while receiving an RDS broadcast, the unit will automatically switch to another frequency on which the same broadcast is available under better receiving conditions.
3. When an emergency broadcast, in which a PTY (Programme-Type code) alarm code is transmitted, is received during the reception of an RDS broadcast, "ALARM" will be displayed and the volume level will be increased and the broadcast message is heard.

Notes:

1. Even when listening to a tape or CD, the unit will switch to the radio and the emergency broadcast can be listened to. At this time the radio operation buttons cannot be used.
2. By switching off the RDS switch during the emergency broadcast, the set will return to the tape or CD operation mode.

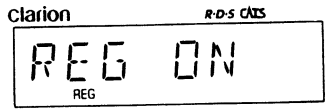


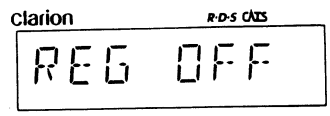


4. When the receiving conditions worsen while receiving an RDS broadcast and there is no stronger broadcast station transmitting the same broadcast, "RDS" will start flashing in a little while. When the receiving conditions improve, the flashing of "RDS" will stop.
5. When the right side (≪) or the left side (≫) of the TUNING button ⑩ is pressed while the RDS switch is on, the unit will only search for stations broadcasting RDS signals.
6. Preset Scan during RDS reception:
   Pressing the PS/AS switch ⑤ for less than two seconds when the RDS switch is switched on, only preset stations broadcasting the RDS signal will be tuned in.
   Auto Store during RDS reception:
   Pressing the PS/AS switch ⑤ for more than two seconds when the RDS switch is switched on, only RDS stations with different content will be stored on the Preset buttons ⑲.

- **Same Programme Search (PI: Programme Identification)**
  If you press a Preset button ⑲ on which an RDS station is stored and the station cannot be received (RDS indicator flashes), press the same Preset button ⑲ one more time ("SEARCH" is shown in the display). The set will search for stations at other frequencies with the same programme content, i.e. the same PI code, as the station stored in memory. Thus, a desired programme can easily be tuned in although the broadcasting frequency is unknown.

- **REG (Regional) Switching**
  1. Pressing the RDS switch ⑱ for 2 seconds or longer permits on/off switching of the Regional mode. The initial setting is the on state in which the "REG" indicator is lit.
     "REG ON" is displayed at the time the Regional mode is engaged, and "REG OFF" is displayed at the time the mode is disengaged.





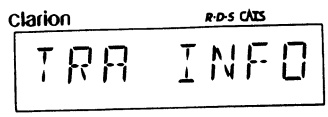
  2. When the Regional mode is engaged (REG indicator lit), only the same station is automatically tracked.
     When the Regional mode is off, the local programme is tracked and you can continue to listen to a programme being switched from one station to another without any interruption.

Note:

- REG only works on the FM band.

✱ Traffic Programme Switch (TP) ☛ 17

1. The TP switch is off when the unit is turned on for the first time.
2. When the TP switch is switched on, "ON" is displayed.
   When a TP station is received, the TP indicator lights. This indicates that the station is broadcasting the RDS TP code or the SK signal in case of ARI broadcast.
   When the TP switch is on and a station broadcasting traffic announcements is tuned in, the TP ON indicators are lit.
   "TRA INFO" is displayed when a traffic information announcement is broadcast. The volume will increase to the preset level and you will hear the the traffic announcement.



Notes:

1. Even when listening to a tape or CD, the unit will switch to the radio and the traffic information announcement can be listened to. At this time the radio operation buttons cannot be used.
2. Switching off the TP switch during the traffic information announcement, the unit will return to the tape or CD operation mode.

3. When the right side (≪) or the left side (≫) of the TUNING button ⑩ is pressed while the TP switch is on, the unit will only search for stations broadcasting the TP signal.

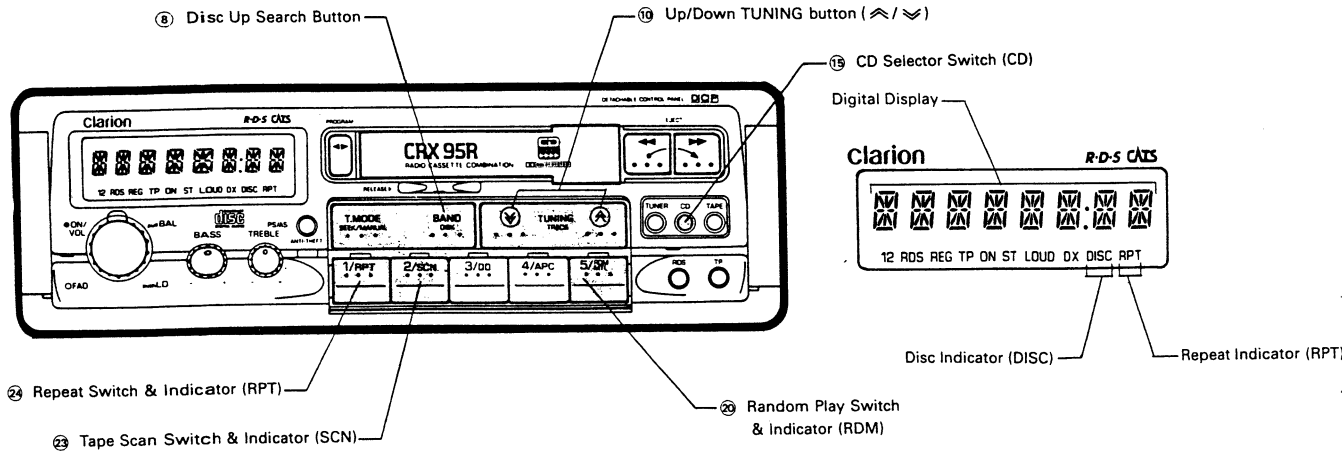
   Note:
   When this button is pressed in areas where traffic information is not broadcast, the seek operation is not cancelled and so the TP switch should be switched off to stop seek tuning.

4. Preset Scan when the TP switch is on:
   Pressing the PS/AS switch ⑤ for less than two seconds when the TP switch is switched on, only preset stations broadcasting the TP signal will be tuned in.
   Auto Store when the TP switch is on:
   Pressing the PS/AS switch ⑤ for more than two seconds when the TP switch is switched on, only stations broadcasting traffic information announcements will be stored on the Preset buttons ⑲.

   Note:
   The TP switch only works on the FM band.

5. In the tape mode or the CD mode when the TP indicator is lit, switching on the RDS switch ⑱ will provide continuous, automatic tracking of the TP station.

CD Changer Control (CRX95R)


⑧ Disc Up Search Button
⑩ Up/Down TUNING button (≪/≫)
⑮ CD Selector Switch (CD)
Digital Display
Clarion
R·D·S CATS
12 RDS REG TP ON ST LOUD DX DISC RPT
Disc Indicator (DISC)
Repeat Indicator (RPT)
㉔ Repeat Switch & Indicator (RPT)
㉓ Tape Scan Switch & Indicator (SCN)
⑳ Random Play Switch & Indicator (RDM)

* **CD Selector Switch (CD)** ☛ ⑮
This switch is used to switch from the tuner, cassette deck, or an external accessory component to the CD Changer mode. CD playback starts when this switch is pressed from the Tuner or Cassette mode.

When the CD Selector Switch ⑮ is pressed, "CD LOAD" is displayed, the power to the CD Changer is switched on, and playback starts from the first track on the first disc. (First time only)
If no magazine has been set in the CD Changer, "NO MAGAZ" will be displayed.

When the CD Selector Switch ⑮ is pressed, the display will first show "CD LOAD", then the disc number, and upon that the track number. During actual disc play, both the track and the played time will be displayed. Refer to the figure on the right for the display messages:

Display System	
① CD selection	CD LOAD
② DISC display	Disc No. 08 DISC
③ TRACK display	TRACK No. 08 TRACK
④ During play	TRACK No. 08 P-TIME 00:00
Random play	RANDOM
No magazine	NO MAGAZ
No such disc	NO DISC

■ **Last Position Memory Function**
This function stores in memory the track that was being played when the power was switched off while a CD was playing or when another mode was selected. The next time playback on the CD Changer is started, play will begin from the beginning of the last track played.

* **Disc UP Search Button** ☛ ⑧
This button is used when you wish to listen to a different CD.
Pressing the Disc UP button ⑧, the CD Changer will set the next higher disc, the disc number will be displayed, and playback continues from the selected disc.
With each subsequent press of the button, the disc number will change and the disc corresponding to the number displayed on the digital display at that time will be played.
If there is no disc in the place corresponding to the displayed number, "NO DISC" will be displayed on the digital display and the player will automatically change to the next disc and play it.

■ **Track Search** ☛ ⑩
Press the right side of the TRACK button (≪) to start playback from the next track. Press the left side of the TRACK button (≫) to return to the beginning of the track currently being listened to and continue play from there.
To move ahead or back several tracks at once, press either side of the TRACK button repeatedly.

■ **Fast Forward/Fast Return** ☛ ⑩
Keeping the right side of the TRACK button (≪) pressed, high-speed playback in the forward direction is engaged.
Keeping the left side of the TRACK button (≫) pressed, high-speed playback in the reverse direction is engaged.
Release the button to stop high-speed playback and resume normal playback.

* **Repeat Switch (RPT)** ☛ ㉔
Press the RPT switch once to repeatedly play back the current selection. The RPT indicator will light.
Press the RPT switch once more for repeat playback of the current DISC. The DISC and RPT indicators will lights.
Press the RPT switch a third time to disengage repeat playback, and confirm that the DISC and RPT indicators go off.

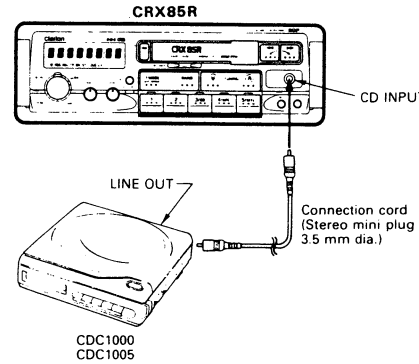
* **Scan Switch (SCN)** ☛ ㉓
Pressing the SCN switch causes the indicator at the top of the switch to light and the CD Changer to play the first 10 seconds of each track on the loaded CDs.
When the track you are searching for is played, press the SCN switch again to continue playback of that track. At the same time the indicator will go off.

* **Random Play Switch (RDM)** ☛ ⑳
Pressing the RDM switch causes the indicator at the top of the switch to light, "RANDOM" is displayed, and random play of all tracks on the selected disc begins.
When all of the tracks on the disc have been played once, the next disc is selected and random playback of that disc continues.
When there are no more discs left in the magazine, random playback will start anew from the first disc in the magazine.
To cancel random playback, press the RDM switch once more and make sure "RANDOM" disappears from the display.

■CONNECTION OF PORTABLE CD PLAYER:
(CRX85R)

Portable CD players such as the CDC-1000 or CDC-1005 can be connected to the jack on the front panel.

Notes: 1. If the plug is inserted into the CD jack while the tape deck is operating, the tape deck is set to the stop mode and the CD mode is set.
2. The unit may not offer its full performance if portable CD players other than the ones specified (CDC-1000 or CDC-1005) are connected.

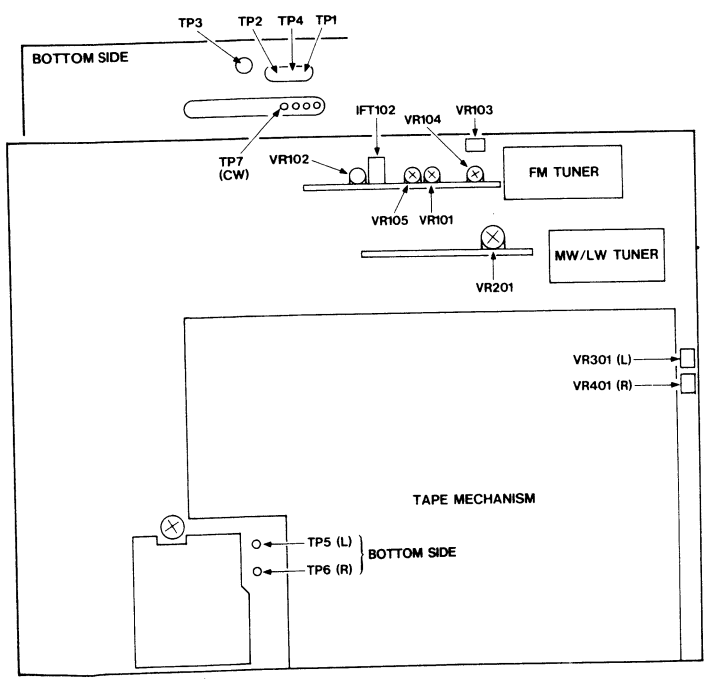


■ADJUSTMENT:

Adjustment item	Adjustment point	Procedure
0V	IFT102	1. Connect the digital voltmeter to TP1 and TP2. 2. Input the 98.1MHz/55dB signal and adjust the reading of digital voltmeter to 0±30mV by IFT102.
Limiter	VR104	1. Input the 98.1MHz/55dB SSG signal. (400Hz MOD) 2. Adjust VR to make the set output 0dB (2.45V). 3. Reduce the output of SG 10dB. 4. Adjust VR104 untill output level decrease to −3dB..
SD	VR105	1. Input the 98.1MHz/23dB signal (400Hz MOD). 2. Adjust VR105 so that the voltage of TP4 is in the range 0V to 3.5V. TP4 — More than 3.5V / 0V 22 dB 23 dB 24 dB
S-meter	VR103	1. Connect the digital voltmeter to TP3. 2. Input the 98.1MHz frequency at 65dB (400Hz MOD) and adjust the level to 4.5V±0.1V by VR103.
SASC	VR101	1. Input the 98.1MHz/65dB, 7kHz modulation frequency, 30% modulation degree SSG signal. 2. Adjust the output level of the volume controller to 0dBm (2.45V). 3. Set the SSG output to 33dB and adjust VR101 so that the output level is −2dB.
Separation	VR102	1. Input the 98.1MHz, connect the output of a stereo modulator to the external modulation terminal, and input a 65dB SSG signal. 2. Set the stereo modulator to the L or R ch and adjust VR102 so that the maximum separation is obtained.
CW (Carrier Wave)	VR201	1. Input the 98.1MHz/55dB, 1kHz (MONO) modulation frequency, 7.0kHz modulation rate SSG signal. 2. Connect the oscilloscope to TP7. 3. Adjust VR103 so that the waveform of TP7 is in the range 5V to 0V. High — Low / 5V / 0V
Dolby NR	VR301 and VR401	Insert a Dolby level test tape (400Hz−200nWb/m), connect the milli-volt meter to TP5 and TP6, and adjust VR301 and VR401 to obtain an output of 245mV±1dB.

● SPECIFICATION —LIMIT— Quieting sensitivity: MW Less than 32dB (at 20dB S/N)
LW Less than 39dB (at 20dB S/N)
UKW Less than 12dB (at 30dB S/N)
Stereo separation: UKW More than 20dB

● ADJUSTMENT POINT



■TAPE MECHANISM

1. Head-azimuth Adjustment

Make playback for the azimuth-tape (8kHz, −10VU), and turn each azimuth-adjusting screw to make each FWD & REV maximum. After adjustment, make adhesion with bond.

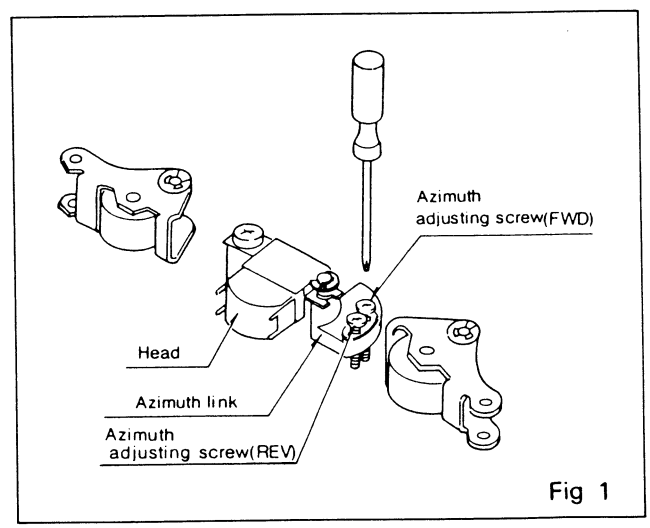


Fig 1

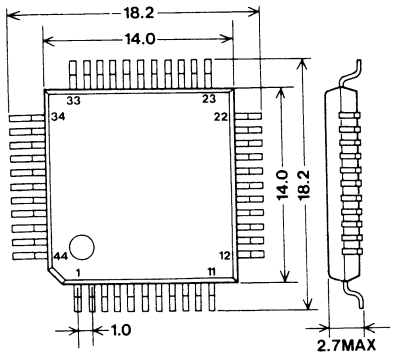
■EXPLANATION OF IC's:

※IC's other than explained below are described in Service Manual 「EXPLANATION OF IC's」 Vol.2~Vol.4.

■TA8172AF 051-1525-00 FM PROCESSOR

This IC is a FM tuner IC, which is integrated from IF to MPX stages into one chip.

Outward Form



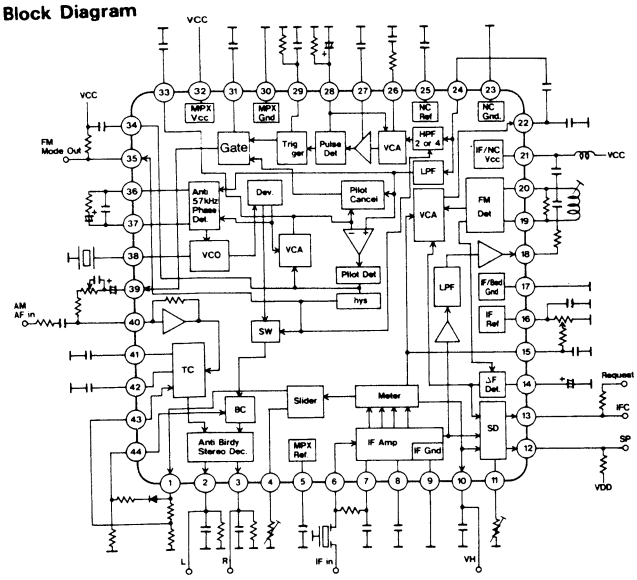
Function

IF.....IF limiter amplification/differential peak FM detection/signal meter/electric field strength muting/detuning muting/station detection/IF counting request.

NC .....Noise detection/noise AGC/noise pass filter/noise pass filter wave changeover/signal delay/unadjusted pilot cancellation/signal holding.

MPX .....Unadjusted PLL method stereo decoder/blender control/tone control (low-cut, high-cut)/anti-ARI/anti-birdie.

Block Diagram



Terminal Connection

Pin No.	Symbol	Function
1	SO	Slider output terminal.
2	L out	MPX output terminal.
3	R out	
4	Slide	Blender of MPX unit, controllable range setting terminal for electric field strength of tone.
5	Ref. 3	3rd nominal voltage terminal.
6	IF in	IF amp. input terminal.
7	Bias	Provide bias to 6th pin via R.
8	By 1	IF amp. bypass terminal.
9	G 1	IF amp. ground terminal.
10	Meter	Meter output terminal in FM mode, and meter input terminal for slider circuit in AM mode.
11	SD	Sensitivity setting terminal of station detector.
12	SP	Pulse counting output terminal stopped by station detector.
13	IFC	IF counting output terminal.
14	ΔF	ΔF detector output smoothing terminal.
15	SM	Soft-mute characteristic setting terminal.
16	Ref 1	1st nominal voltage terminal.
17	G 4	Sub-straight ground terminal.
18	IF out	IF limiter amp. output terminal.
19	Det 1	Input terminal of differential peak detection.
20	Det 2	
21	B 1	Power terminals of IF and noise canceler units.
22	AF out	Audio signal output terminal.
23	G 2	Ground terminal.
24	NC in	Input terminal of noise canceler unit.
25	Ref 2	2nd nominal voltage terminal.
26	By 2	AGC amp. bypass terminal of noise canceler unit.
27	By 3	Noise amp. bypass terminal of noise canceler unit.
28	AGC	Noise AGC time-constant setting terminal of noise canceler unit.
29	PW	Trigger-pulse range setting terminal of noise canceler unit.
30	G 3	Ground terminal of MPX unit.
31	Gate	Composite signal holding gate terminal of noise canceler unit.
32	B 2	Power terminal of MPX unit.
33	P	Canceling signal output terminal for pilot cancellation.
34	PD3	Output terminal of pilot detection circuit.
35	Mode	Mode output terminal of stereo/mono selection.
36	PD1	Output terminal of phase detection circuit.
37	PD2	
38	VCO	VCO circuit oscillation terminal.
39	NC out	Noise canceler output terminal.
40	MPX in	MPX input terminal.
41	LC	Cut-off frequency setting terminal.
42	HC	
43	TC	Tone-control (low-cut, high-cut) control terminal.
44	BC	Blender control terminal.

■PARTS LIST:

◎Electrical section

◎MAIN P.W.B

Note) Several different parts listed in the column are alternative parts. One of those parts is used in the set.
△ : Use only CRX95R
▲ : Use only CRX85R

REF.NO.	PART NO.	DESCRIPTION	Q'TY
D△512 △607~610	001-0330-00	Diode 1SS119	5
	001-0294-00	Diode 1SS133	
D503	001-0334-00	Diode DSA17B	1
D205,501,502 603,605	001-0356-00	Diode 1SS184	5
	001-0354-00	Diode MA151WK	
D606,611	001-0361-10	Diode 1SS198	2
D102	001-0367-00	Diode 1SS226	1
D510,606	001-0423-33	Diode MA4082	2
D103,104,509	001-0423-24	Diode MA4091	3
D504~508	001-0466-00	Diode S5688B	5
	001-0499-00	Diode ERA15-01	
D110	001-0487-03	Diode AA3822K	1
D160,△511	001-0516-00	Diode MA111	2
D601,602	001-0525-00	Diode IMN10	2
IFT101	005-1022-01	IF-transformer	1
IFT102	005-1035-00	IF-transformer	1
L502,503	009-0470-03	Choke	2
L501	009-0633-01	Choke	1
L104,105	010-1892-07	Coil	2
L103	010-2174-36	Coil 1mH	1
L107	010-2199-00	Coil 0.1μH	1
L101,107	010-2199-16	Coil 2.2μH	2
L102	010-2199-21	Coil 5.6μH	1
L106,201	010-2199-40	Coil 220μH	2
VR501	012-3808-09	Variable resistor 47KΩ	1
VR301,401	012-4318-06	Variable resistor 10KΩ	2
VR201	012-4318-09	Variable resistor 47KΩ	1
VR103	012-4318-13	Variable resistor 470KΩ	1
VR105	012-4863-06	Variable resistor 10KΩ	1
VR101,102	012-4863-07	Variable resistor 22KΩ	2
VR104	012-4863-09	Variable resistor 47KΩ	1
R506	032-0098-02	Film chip resistor 43KΩ	1
R311,411	032-0100-02	Film resistor 15KΩ	2
R310,410	032-0100-03	Film resistor 1KΩ	2
R529	032-0108-00	Film resistor 1/2W1.8Ω	1
C609	042-0200-00	Tantalum capacitor 10V47μF TAN	1
C157	042-0334-32	Electrolytic capacitor 16V100μF	1
C153,155	042-0334-33	Electrolytic capacitor 25V47μF	2
C512	042-0428-00	Electrolytic capacitor 16V2200μF	1
C511	042-0439-00	Electrolytic capacitor 10V220μF	1
C508,560,813	042-0452-01	Electrolytic capacitor 10V220μF	3
C504,509	042-0452-02	Electrolytic capacitor 16V100μF	2
C513	043-0251-00	Film capacitor 0.1μF	1
C121	043-0261-00	Ceramic capacitor 0.1μF	1
CCT601	050-0077-07	Component circuit 1KΩx4 (95R)	1
	050-0091-05	Component circuit 1KΩx3 (85R)	
CCT201	050-0086-60	Component circuit 10KΩx8	1
IC603	051-0142-35	IC MC14013BF	1
	051-0142-05	IC TC4013BF	

REF.NO.	PART NO.	DESCRIPTION	Q'TY
IC△606	051-0160-56	IC HD74LS07FPD	1
IC102,501	051-0267-35	IC MC14066BF	2
	051-0267-05	IC TC4066BF	
IC506	051-0350-55	IC NJM4558M	1
IC202,507	051-0556-01	IC NJM2058M	2
IC901	051-0561-01	IC AN6263N	1
IC504	051-0606-01	IC KC-819	1
	051-0606-71	IC	
IC503	051-0619-01	IC LB0354	1
IC205	051-0620-00	IC LA2000C	1
IC604	051-0869-05	IC MB3771PF	1
IC505	051-0958-01	IC TA8205AH	1
	051-0958-51	IC MC13306T3S	
IC502	051-1038-01	IC CXA1102M	1
IC203	051-1144-10	IC LA2231M-B	1
IC204	051-1150-10	IC LC7071NM	1
IC605	051-1187-00	IC TA78DL05P	1
IC103	051-1323-05	IC LC7218M	1
IC602	051-1375-35	IC	1
IC201	051-1380-04	IC μPD75328GC-521	1
IC601	051-1381-04	IC μPD75116GF-762-3BE	1
IC801	051-1423-00	IC TA8162SN	1
IC101	051-1525-00	IC TA8172AF	1
X202	060-0115-02	Ceramic resonator	1
SUP101	060-0122-10	Surge protector	1
X201,601	060-0130-50	Ceramic resonator 4.19M	2
X203	060-0146-50	Ceramic resonator	1
BPF201	060-0177-00	Band pass filter 57K	1
BPF101	060-0235-00	Band pass filter	1
DC101	060-0236-00	DC-DC convertor	1
X101	060-0240-00	Ceramic resonator	1
X102	061-1066-00	Crystal 7.2M	1
Q608	100-1048-00	Transistor 2SA1048	1
Q△513,612	100-1162-00	Transistor 2SA1162	2
Q108	100-1175-00	Transistor 2SA1175	1
Q109	100-1297-00	Transistor 2SA1297	1
Q507,903	101-1240-00	Transistor 2SB1240	2
Q509	101-1243-00	Transistor 2SB1243	1
Q110,512,615	102-1846-00	Transistor 2SC1846	3
105,107 113~115 Q502,504,516 ▲614,901 904,905	102-2712-51	Transis tor 2SC2712GL	12
Q111,112	102-3624-00	Transistor 2SC3624A	2
Q607	102-3732-00	Transistor 2SC3732	1
104,301,302 Q303,401,402 403,503	103-1306-00	Transistor 2SD1306	8
Q511	103-1858-00	Transistor 2SD1858	1
Q106	108-0372-00	FET 2SK372	1

REF.NO.	PART NO.	DESCRIPTION	Q'TY
Q601	125-0002-03	Transistor RN2403	1
	125-0014-03	Transistor DTA143	
Q203,506,610	125-0002-06	Transistor RN2406	3
	125-0014-06	Transistor DTA143	
Q505	125-2004-02	Transistor RN1402	1
101,102,116 117,508,510 Q△514,515 609,611,613 614,902	125-2004-03	Transistor RN1403	13
	125-2020-03	Transistor DTC124	
Q602~606	125-2004-06	Transistor RN1406	5
	125-2020-06	Transistor DTC143	
C317,417	171-1222-06	Ceramic capacitor 1200PF	2
C162	172-6831-10	Polyester capacitor 0.068μF	1
C319,320,419 420	173-1542-10	Polyester capacitor 0.15μF	4
C523	173-2222-10	Polyester capacitor 2200PF	1
C170,171,172 601	176-1011-00	Ceramic chip capacitor 100PF CH	4
C167,168,169	176-1801-00	Ceramic chip capacitor 18PF CH	3
C129	176-2201-02	Ceramic chip capacitor 22PF RH	1
C113	177-1042-05	Ceramic chip capacitor 0.1μF	1
C164,229,230	177-3332-05	Ceramic chip capacitor 0.033μF	3
C115	177-3932-05	Ceramic chip capacitor 0.039μF	1
107,119,127 C128,135,136 154,156,158 166	177-4732-05	Ceramic chip capacitor 0.047μF	10
C105,108,902	177-6832-05	Ceramic chip capacitor 0.068μF	3
124,149,152 C202,208,219 350,351,450 451,606	178-1022-05	Ceramic chip capacitor 1000PF	11
104,106,109 111,122,123 133,141,163 C173,209,210 212,213,214 215,221,602 604,607,608 610	178-1032-05	Ceramic chip capacitor 0.01μF	22
C808,809	178-1232-05	Ceramic chip capacitor 0.012μF	2
C138	178-2222-05	Ceramic chip capacitor 2200PF	1
C101,131,140 228,501,901	178-2232-05	Ceramic chip capacitor 0.022μF	6
C144	178-3312-05	Ceramic chip capacitor 330PF	1
C218,220,301 302,401,402	178-3322-05	Ceramic chip capacitor 3300PF	6
C118	178-4712-05	Ceramic chip capacitor 470PF	1
C103,145	178-4722-05	Ceramic chip capacitor 4700PF	2

REF.NO.	PART NO.	DESCRIPTION	Q'TY
C231	178-6822-05	Ceramic chip capacitor 6800PF	1
C803,804	178-8212-05	Ceramic chip capacitor 820PF	2
C114,801,802	182-1053-62	Electrolytic capacitor 50V1μF	3
110,112,117 C309,312,408 409,412	182-1063-32	Electrolytic capacitor 16V10μF	8
C314,414	182-1066-22	Electrolytic capacitor 10V10μF NP	2
C216	182-1073-12	Electrolytic capacitor 6.3V100μF	1
C161,520,612	182-1073-22	Electrolytic capacitor 10V100μF	3
C519	182-1073-32	Electrolytic capacitor 16V100μF	1
C310,410	182-2243-62	Electrolytic capacitor 50V0.22μF	2
C316,416	182-2256-52	Electrolytic capacitor 35V2.2μF NP	2
C318,418	182-2263-32	Electrolytic capacitor 16V22μF	2
C321,322,421 422	182-4743-62	Electrolytic capacitor 50V0.47μF	4
313,325,326 C411,413,425 426	182-4753-52	Electrolytic capacitor 35V4.7μF	7
C315,415	182-4756-32	Electrolytic capacitor 16V4.7μF NP	2
C147	182-4763-12	Electrolytic capacitor 6.3V47μF	1
C102,108,507	182-4763-22	Electrolytic capacitor 10V47μF	3
C323,324	182-4763-32	Electrolytic capacitor 16V47μF	2
C201	183-1043-62	Electrolytic capacitor 50V0.1μF	1
120,142,143 148,175,203 C204,206,305 405,505,521 811,812	183-1053-62	Electrolytic capacitor 50V1μF	14
116,132,134 137,160,205 C222,308,502 515,517,605 807,810,903	183-1063-32	Electrolytic capacitor 16V10μF	15
C130	183-2253-62	Electrolytic capacitor 50V2.2μF	1
C211,217,224 510	183-2263-12	Electrolytic capacitor 6.3V22μF	4
C611	183-2263-32	Electrolytic capacitor 16V22μF	1
C207,805,806	183-3363-22	Electrolytic capacitor 10V33μF	3
165,223,303 C304,306,311 403,404,406	183-4753-52	Electrolytic capacitor 35V4.7μF	9
C174,225,226 227,506,522	183-4763-12	Electrolytic capacitor 6.3V47μF	6
C423,424,904	183-4763-32	Electrolytic capacitor 16V47μF	3
C307,407,	183-6843-62	Electrolytic capacitor 50V0.68μF	2
C159,503,518	183-6863-22	Electrolytic capacitor 10V68μF	3
C516	184-2273-31	Electrolytic capacitor 16V220μF	1

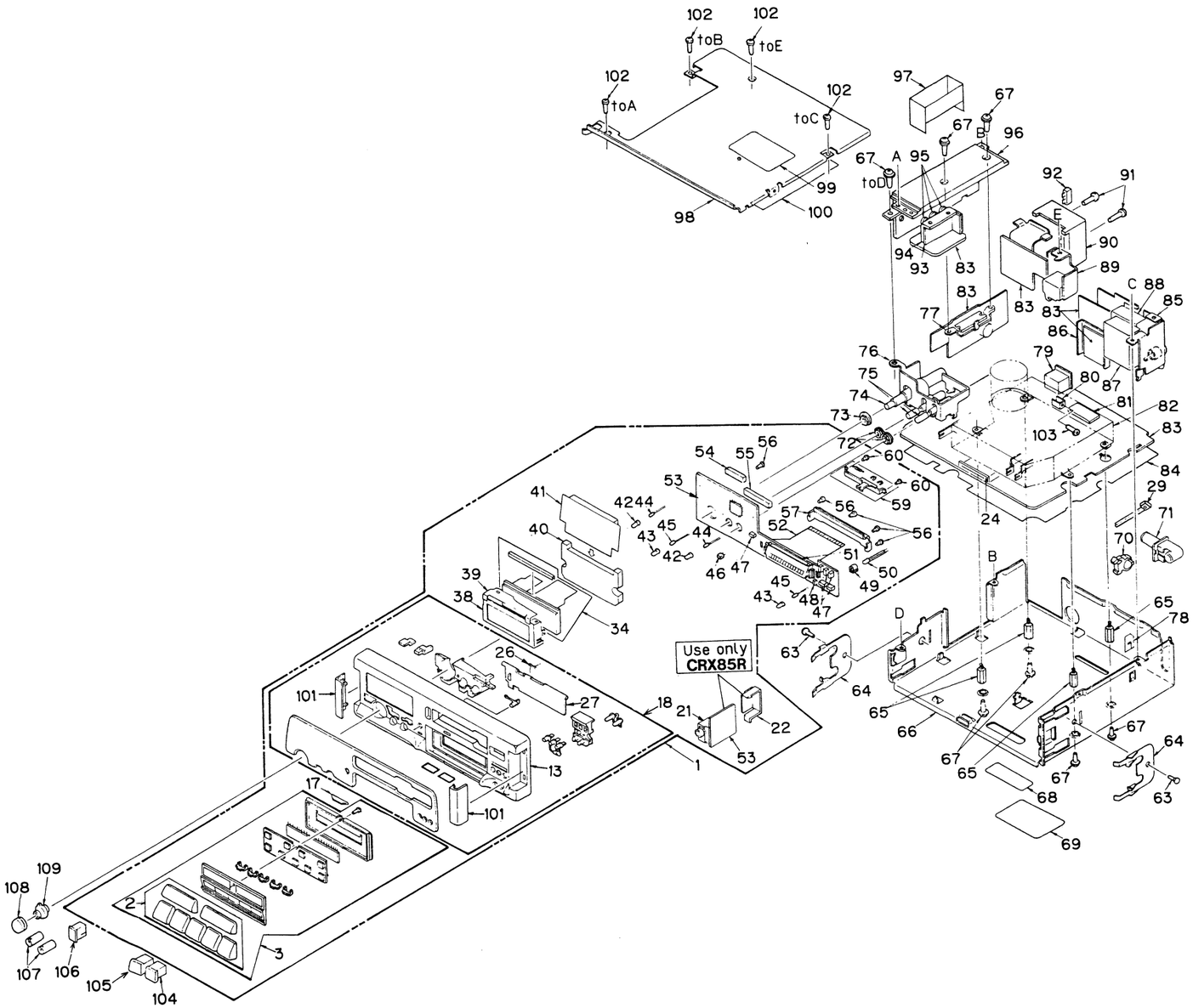
◎ESCUTCHEON P.W.B

REF.NO.	PART NO.	DESCRIPTION	Q'TY
D711	001-0459-01	LED GL9HD44	1
IC701	051-1151-00	IC μPD7225G	1

REF.NO.	PART NO.	DESCRIPTION	Q'TY
C701,702	178-1032-05	Ceramic chip capacitor 0.01μF	2

■EXPLODED VIEW • PARTS LIST:

◎Main section



REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	940-1532A	Escutcheon ass'y (CRX95R)	1
	940-1533A	Escutcheon ass'y (CRX85R)	
2	947-0243-00	Button ass'y (CRX95R)	1
	947-0250-00	Button ass'y (CRX85R)	
3	948-0244-00	DCP ass'y (CRX95R)	1
	948-0245-00	DCP ass'y (CRX85R)	
13	370-5247-02	Escutcheon (CRX95R)	1
	370-5248-01	Escutcheon (CRX85R)	
17	382-2217-00	Button	1
18	940-3271-00	Sub escutcheon ass'y (CRX95R)	1
	940-3272-00	Sub escutcheon ass'y (CRX85R)	

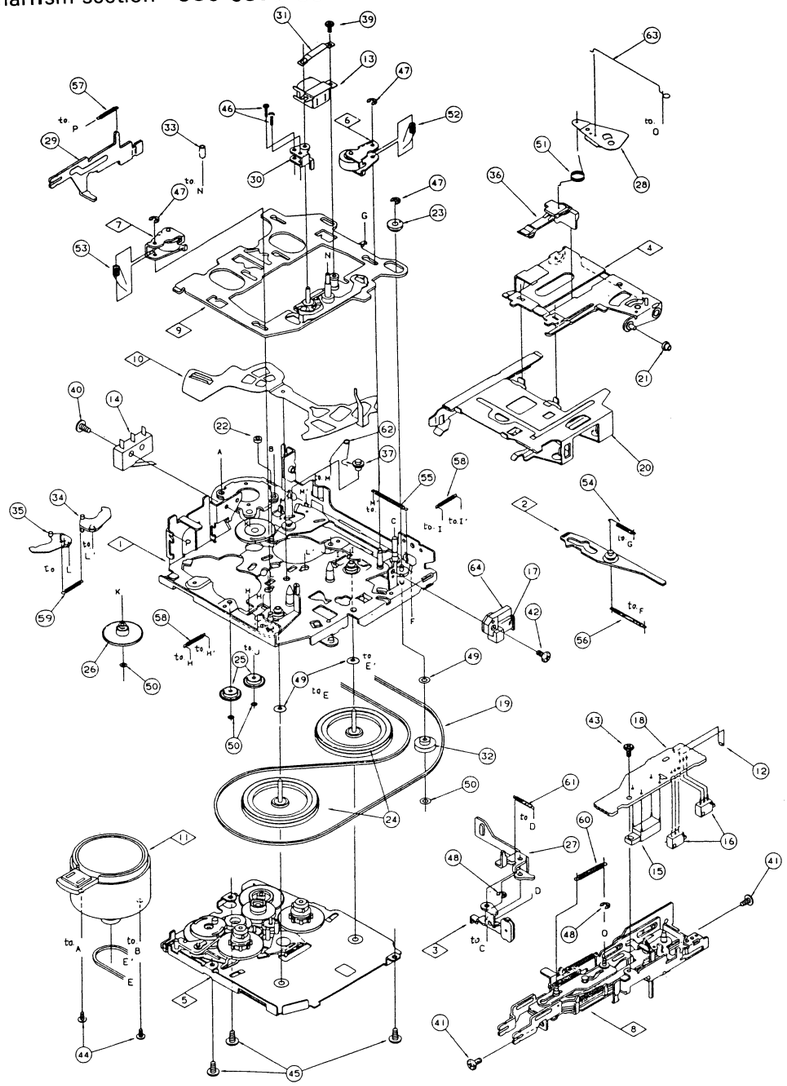
REF.NO.	PART NO.	DESCRIPTION	Q'TY
21	075-0306-00	CD jack (CRX85R)	1
22	335-3493-00	CD jack holder (CRX85R)	1
24	074-0731-32	Outlet socket	1
26	750-2626-00	Spring	1
27	320-0431-68	Dustproof cover (CRX95R)	1
	320-0431-69	Dustproof cover (CRX85R)	
29	335-0833-01	Lead holder	1
34	379-0048A	LCD ass'y	1
38	330-9514-00	LCD holder	1
39	347-3342-00	Conductor	1
40	335-3467-00	Illumi. plate (LCD)	1

REF.NO.	PART NO.	DESCRIPTION	Q'TY
41	347-3340-00	Film (LCD)	1
42	345-4441-58	Lamp cap	2
43	345-4441-01	PL cap	2
44	017-0373-00	Pilot lamp	2
45	017-0345-09	Pilot lamp	2
46	001-0459-01	LED	1
47	013-3741-01	Switch (CRX95R) / (CRX85R)	6 / 3
48	013-3916-00	Switch	1
49	345-3335-07	PL holder	1
50	017-0345-01	Pilot lamp	1
51	074-0913-00	Outlet socket	1

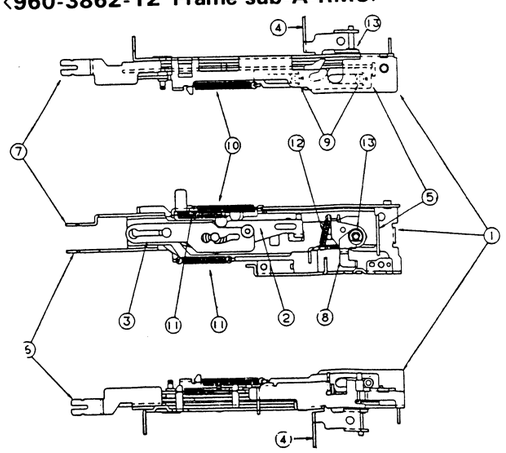
REF.NO.	PART NO.	DESCRIPTION	Q'TY
52	099-9086-00	P.W.B (FLEX)	1
53	099-9217-00	P.W.B (CRX95R)	1
	099-9218-00	P.W.B (CRX85R)	
54	074-0931-14	Outlet socket (14P)	1
55	074-0931-22	Outlet socket (22P)	1
56	702-2005-81	Tap screw (2x5)	5
57	330-9394-00	Connect holder (DCP)	1
59	330-0002A	Lock lever ass'y	1
60	716-0674-00	Screw	2
63	714-3006-41	Machine screw (M3x6)	2
64	750-2649-01	Spring	2
65	716-0877-00	Stud bolt	4
66	311-1444-02	Lower case (CRX95R)	1
	311-1444-03	Lower case (CRX85R)	
67	716-0878-00	IT-screw	7
68	347-3315-00	Shade	1
69	286-7869-00	Set plate (CRX95R)	1
	286-7870-00	Set plate (CRX85R)	
70	335-3399-00	Antenna holder	1
71	092-0641-00	Antenna receptacle	1
72	722-0433-00	Nut	2
73	722-0370-00	Nut	1
74	012-4988-00	Variable resistor (MAIN)	1
75	012-4987-00	Variable resistor (B/T)	2
76	330-9390-00	VOL holder	1
77	330-8976-01	IC support	1
78	347-3341-00	Film	1
79	074-0818-00	Outlet socket (CRX95R)	1
80	313-1278-00	Heat sink	1
81	060-0236-00	DC-DC converter	1
82	930-0578-86	Tape mechanism	1
83	099-9216-06	P.W.B	1
84	347-3332-00	Insulator	1
85	330-9392-01	Antenna plate	1
86	347-2339-00	Insulator	1
87	880-1601A	Block ass'y (L/M)	1
88	880-1418A	Block ass'y (FM)	1
89	330-9391-00	Back plate	1
90	074-0930-00	Outlet socket	1
91	714-2610-81	Machine screw (M2.6x10)	2
92	060-0057-56	Auto fuse (10A)	1
93	330-9409-00	IC holder	1
94	313-1423-00	Heat sink	1
95	714-2608-81	Machine screw (M2.6x8)	3
96	313-1398-07	Heat sink	1
97	347-3291-00	Insulator	1
98	303-0383-00	Upper cover	1
99	285-1410-00	Guide label (SERVICE)	1
100	330-9437-01	Shield plate	1
101	371-3642-00	Trim plate	2
102	714-2606-81	Machine screw (M2.6x6)	4
103	714-3008-81	Machine screw (M3x8)	1
104	382-2336-00	Button (FF)	1
105	382-2337-00	Button (REW)	1
106	382-2335-00	Button (PRO)	1
107	380-5135-00	Knob (B/T)	2
108	380-5062-00	Knob (MAIN)	1
109	380-5063-00	Knob (FAD)	1

■EXPLODED VIEW • PARTS LIST:

◎Tape mechanism section **930-0578-86**

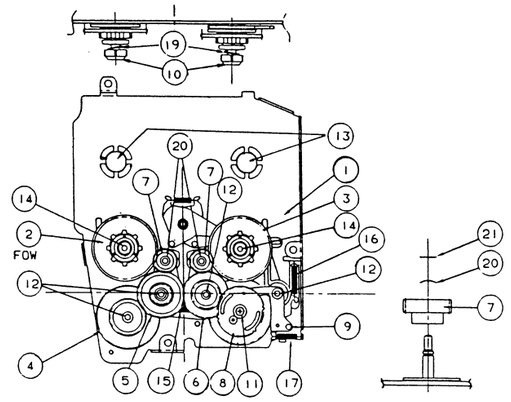


‹960-3862-12 Frame sub-A-RMS›



REF.NO.	PART NO.	DESCRIPTION	Q'TY
1	960-3841-04	Frame ass'y RMS	1
2	960-3887-03	Select P-ass'y S	1
3	960-3845-03	Click P-ass'y	1
4	630-1931-03	Lock arm	1
5	630-1938-03	Eject plate RS	1
6	630-1942-06	FF lever RM	1
7	630-1947-07	REW lever RM	1
8	960-4058-04	SW plate ass'y	1
9	610-0296-01	Eject-P-roller	2
10	750-2549-01	Eject spring R	1
11	750-2550-02	FF spring RM	2
12	750-2556-01	SW plate spring	1
13	743-1500-20	E-ring	2

‹960-4209-03 Bottom sub ass'y›



Ref. No.	Part No. (Order No.)	Description	Q'ty
19	750-2564-01	Slide spring	2
20	745-0678-03	Washer	2
21	746-0797-00	Washer	2

Ref. No.	Part No. (Order No.)	Description	Q'ty
1	960-4210-01	Bottom ass'y E	1
2	960-3854-04	Reel ass'y F	1
3	960-3855-06	Reel ass'y R	1
4	613-0088-01	Gear B	1
5	613-0089-02	Gear F	1
6	613-0090-02	Gear R	1
7	613-0091-02	Play idler gear	2
8	613-0093-03	Change gear	1
9	631-0546-02	Lock link	1
10	631-1967-00	Slide bush	2
11	716-0716-10	Screw	1
12	746-0761-00	Washer	6
13	746-0767-00	Washer	2
14	746-0813-00	Washer	2
15	750-2542-00	Idler-P-spring	1
16	750-2543-01	Sensing spring	1
17	750-2544-03	Lock-L-spring	1
18	750-2546-01	Cancel spring	1

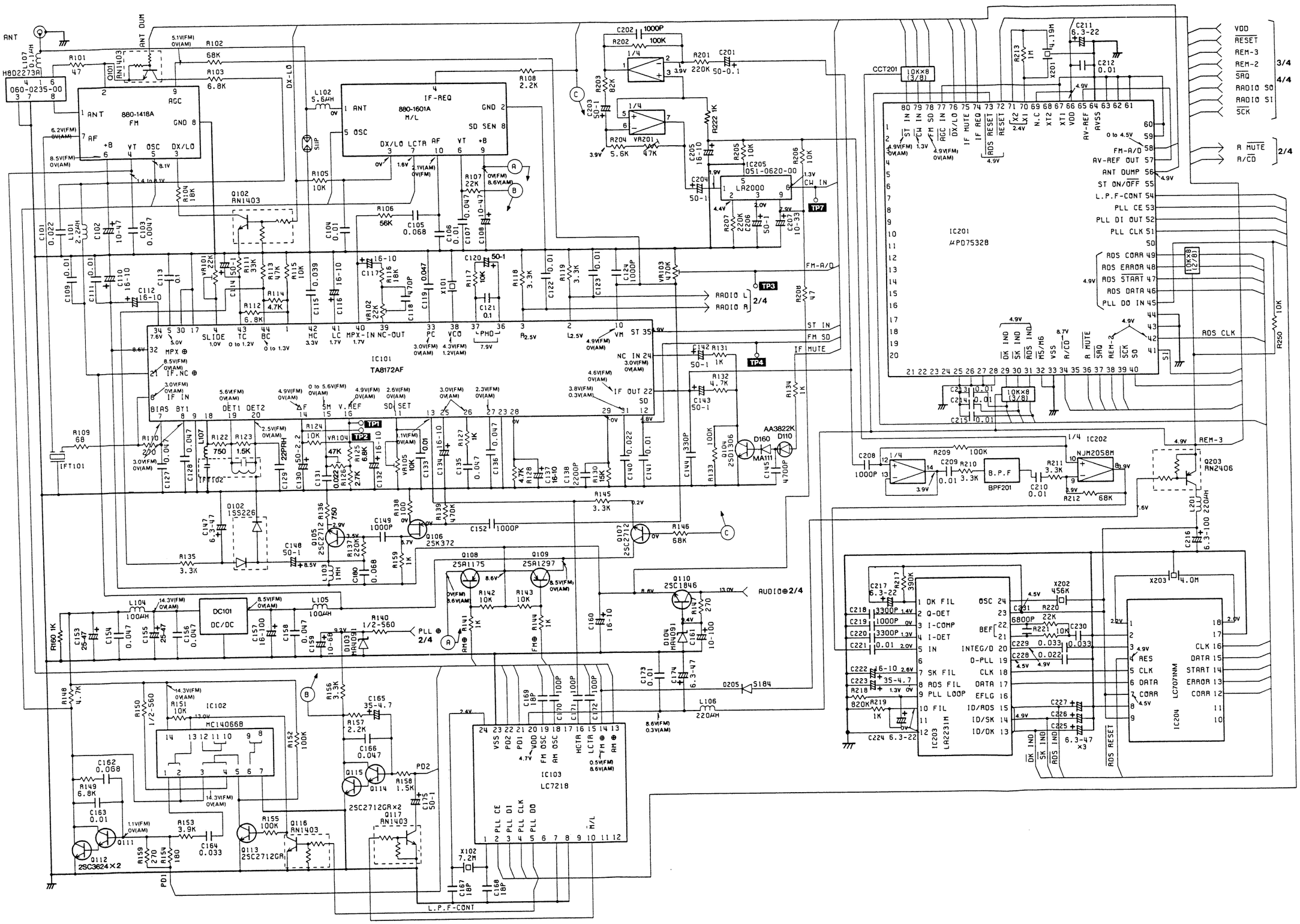
■PARTS LIST: ◎Tape mechanism section

Ref. No.	Part No. (Order No.)	Description	Q'ty
1	960-3834-04	Deck-P ass'y R	1
2	960-3837-04	Shift-P ass'y	1
3	960-3839-03	Plunger-L ass'y	1
4	960-3840-02	Guide arm ass'y	1
5	960-4209-03	Bottom sub-A-E	1
6	960-4230-00	Roller ass'y F	1
7	960-4231-00	Roller ass'y R	1
8	960-3862-12	Frame sub-A-RMS	1
9	960-4224-00	Head-P ass'y RMD	1
10	960-3881-05	CH plate ass'y	1
11	SMA-121-100	Motor ass'y	1
12	001-0330-00	Diode	1
13	011-0310-00	Head	1
14	013-2690-02	Switch	1
15	013-3807-00	Switch	1
16	013-3808-11	Switch	2
17	960-3392-02	Coil ass'y	1
18	099-7851-01	PWB	1
19	602-0103-10	Belt	1
20	606-0083-09	Pack guide	1
21	610-0226-01	Roller	1
22	610-0293-01	Power roller	1
23	610-0294-01	Head-P-G-roller	1
24	611-0077-01	Flywheel	2
25	613-0095-01	FF idler gear	2
26	613-0087-10	Gear A	1
27	630-1930-02	OFF arm	1
28	630-1932-02	Swing arm	1
29	630-2290-00	Program lever	1
30	630-1956-02	Adjust link	1
31	630-1962-02	Head spring	1
32	604-0035-01	Tension pulley	1
33	631-0545-01	Eject roller	1

Ref. No.	Part No. (Order No.)	Description	Q'ty
34	631-0550-02	Brake F	1
35	631-0551-02	Brake R	1
36	631-0552-03	Pack stopper	1
37	632-1886-02	Lock pin	1
39	716-0816-00	Screw (M2x3)	1
40	714-2308-81	Machine screw (M2.3×8)	1
41	714-2604-81	Machine screw (M2.6×4)	2
42	714-2606-11	Machine screw (M2.6×6)	1
43	716-0790-02	Machine screw	1
44	716-0715-15	Screw	2
45	716-0717-10	Screw	3
46	716-0718-21	Screw	2
47	743-1500-20	E-ring	3
48	743-2000-20	E-ring	2
49	746-0624-00	Washer	3
50	746-0761-00	Washer	4
51	750-2361-01	Spring	1
52	750-2929-00	Roller spring F	1
53	750-2928-00	Roller spring R	1
54	750-2537-02	Over-P-spring	1
55	750-2538-01	Power-P-spring	1
56	750-2539-01	Shift-P-spring	1
57	750-2541-02	Program spring	1
58	750-2545-00	FF gear spring	2
59	750-2547-00	Brake spring	1
60	750-2554-03	Click-P-spring	1
61	750-2555-02	OFF arm spring	1
62	750-2568-00	Lock spring	1
63	750-2569-03	Eject rod RS	1
64	630-1479-02	Core	1

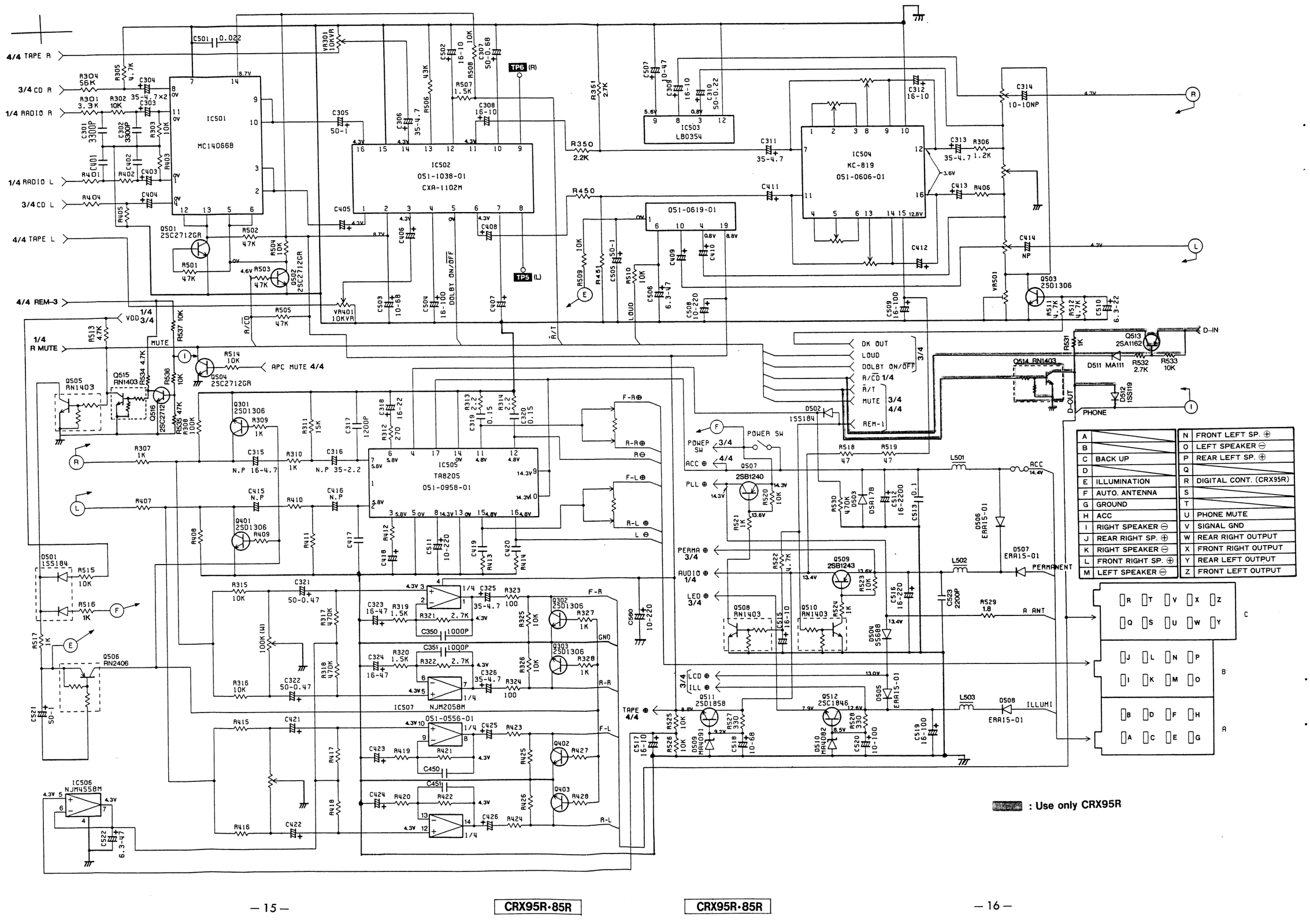
■CIRCUIT DIAGRAM: 1/4

◎CRX95R/CRX85R



■CIRCUIT DIAGRAM: 2/4

◎CRX95R/CRX85R



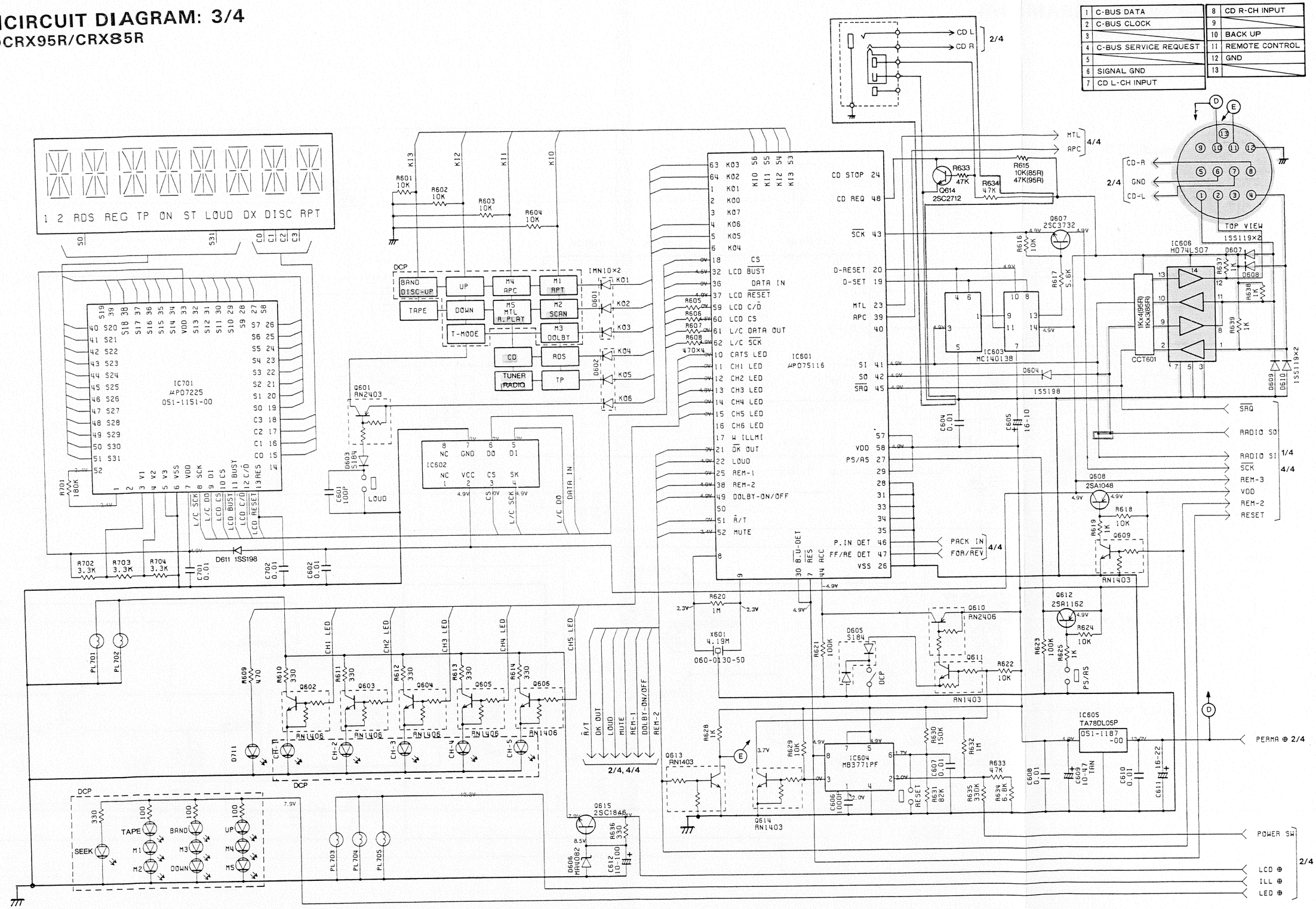
A		N	FRONT LEFT SP. ⊕
B		O	LEFT SPEAKER ⊖
C	BACK UP	P	REAR LEFT SP. ⊕
D		Q	
E	ILLUMINATION	R	DIGITAL CONT. (CRX95R)
F	AUTO. ANTENNA	S	
G	GROUND	T	
H	ACC	U	PHONE MUTE
I	RIGHT SPEAKER ⊖	V	SIGNAL GND
J	REAR RIGHT SP. ⊕	W	REAR RIGHT OUTPUT
K	RIGHT SPEAKER ⊖	X	FRONT RIGHT OUTPUT
L	FRONT RIGHT SP. ⊕	Y	REAR LEFT OUTPUT
M	LEFT SPEAKER ⊖	Z	FRONT LEFT OUTPUT

: Use only CRX95R

■CIRCUIT DIAGRAM: 3/4

◎CRX95R/CRX85R

1	C-BUS DATA	8	CD R-CH INPUT
2	C-BUS CLOCK	9	
3		10	BACK UP
4	C-BUS SERVICE REQUEST	11	REMOTE CONTROL
5		12	GND
6	SIGNAL GND	13	
7	CD L-CH INPUT		

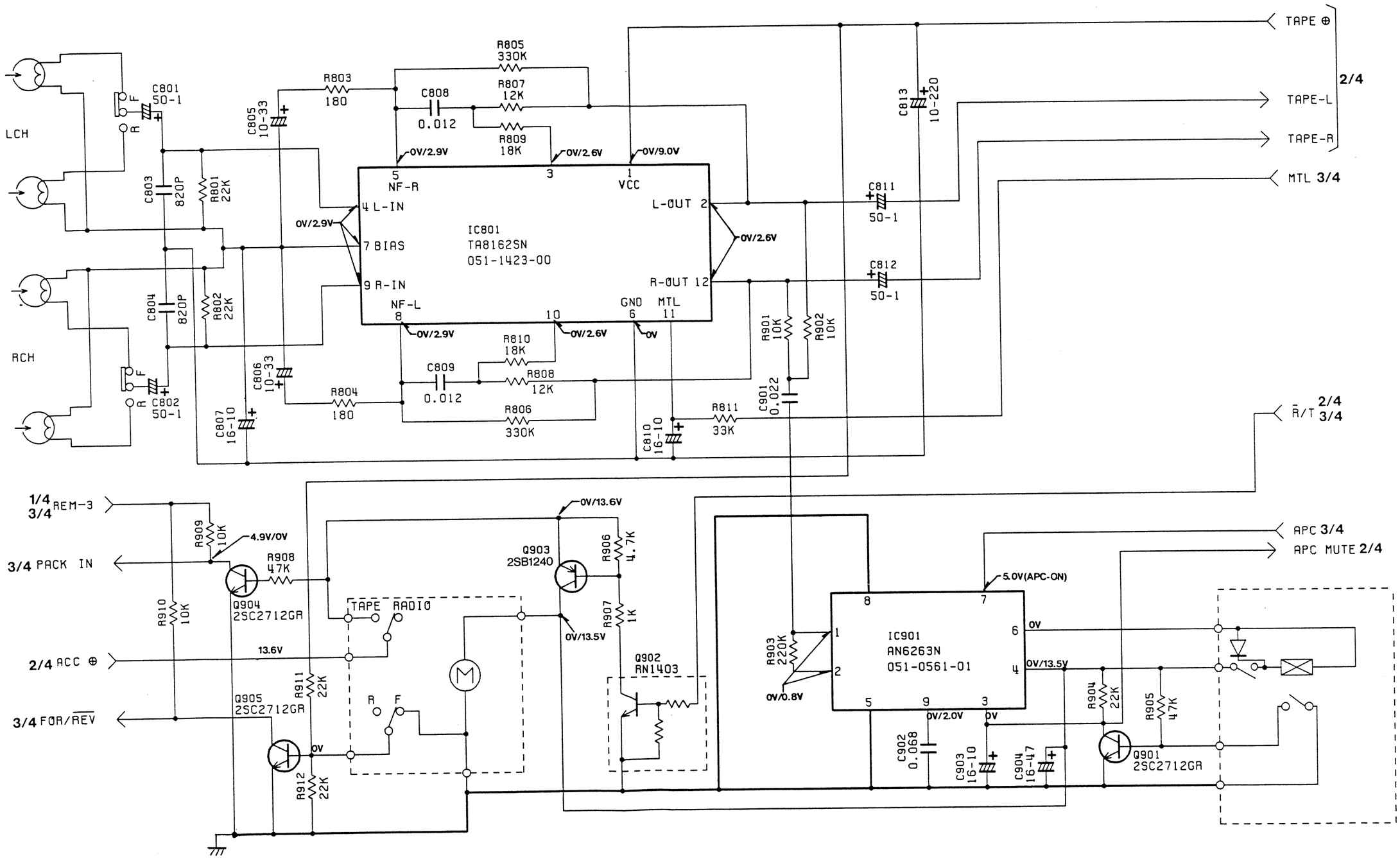


: Use only CRX95R

: Use only CRX85R

■CIRCUIT DIAGRAM: 4/4

◎CRX95R/CRX85R



■PRINTED WIRING BOARD:

◎CRX95R/CRX85R

△ : Use only CRX95R

▲ : Use only CRX85R

1	C-BUS DATA
2	C-BUS CLOCK
3	
4	C-BUS SERVICE REQUEST
5	
6	Signal GND
7	CD L-ch input

8	CD R-ch input
9	
10	BACK UP
11	REMOTE CONTROL
12	GND
13	

To CD Changer (CRX95R)

I	GRY/GRN	RIGHT SPEAKER (-)
J	GRY/RED	REAR RIGHT SP. (+)
K	GRY/BLK	RIGHT SPEAKER (-)
L	GRY	FRONT RIGHT SP. (+)
M	WHT/BLK	LEFT SPEAKER (-)
N	WHT	FRONT LEFT SP. (+)
O	WHT/GRN	LEFT SPEAKER (-)
P	WHT/RED	REAR LEFT SP. (+)
H	BLU	ACC
F	RED/WHT	ILLUMINATION
E	RED	BACK UP
C	RED	AMP. CONTROL
	BLU/WHT	AUTO. ANTENNA
F	BLU/YEL	

Portable CD Input Jack

D.C. MOTOR

ANTENNA

P.B HEAD

FM TUNER 880-1418A

MW/LW TUNER 880-1601A

IC901 AN6263N

IC801 TA8162SN

DC101 DC-DC CONVERTER

IC102 MC14066BF

IC603 M51132FP

IC601 μPD7910G

IC701 μPD7225

IC220 μPD75328

IC504 NJM4558M

IC503 NJM4558M

X102 X601 X201

074-0913-00

074-0931-22

074-0931-14

074-0731-32

854-2071-00

854-2072-00

854-2073-00

854-2074-00

854-2081-00

854-2070-00

854-1893-00

854-1891-00

854-2068-00

854-2123-01

854-2069-00

076-0390-10

076-0390-07

076-0368-06

(CRX95R)

(CRX85R)

ESCUTCHEON P.W.B (CRX85R)

ESCUTCHEON P.W.B (CRX95R)

L.C.D

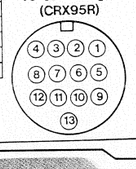
Detachable Control Panel

△ : Use only CRX95R

▲ : Use only CRX85R

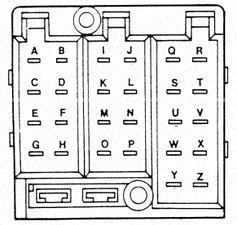
1	C-BUS DATA
2	C-BUS CLOCK
3	
4	C-BUS SERVICE REQUEST
5	
6	Signal GND
7	CD L-ch input
8	CD R-ch input
9	
10	BACK UP
11	REMOTE CONTROL
12	GND
13	

To CD Changer (CRX95R)



RIGHT SPEAKER ⊖ (GRY/GRN)
REAR RIGHT SP. ⊕ (GRY/RED)
RIGHT SPEAKER ⊖ (GRY/BLK)
FRONT RIGHT SP. ⊕ (GRY)
LEFT SPEAKER ⊖ (WHT/BLK)
FRONT LEFT SP. ⊕ (WHT)
LEFT SPEAKER ⊖ (WHT/GRN)
REAR LEFT SP. ⊕ (WHT/RED)
ACC (BLU)
ILLUMINATION (RED/WHT)
BACK UP (RED)
AMP. CONTROL (BLU/WHT)
AUTO. ANTENNA (BLU/YEL)
GROUND (BLK)

A		N	FRONT LEFT SP. ⊕
B		O	LEFT SPEAKER ⊖
C	BACK UP	P	REAR LEFT SP. ⊕
D		Q	
E	ILLUMINATION	R	DIGITAL CONTROL (95R)
F	AUTO. ANTENNA	S	
G	GROUND	T	
H	ACC	U	PHONE MUTE
I	RIGHT SPEAKER ⊖	V	SIGNAL GND
J	REAR RIGHT SP. ⊕	W	REAR RIGHT OUTPUT
K	RIGHT SPEAKER ⊖	X	FRONT RIGHT OUTPUT
L	FRONT RIGHT SP. ⊕	Y	REAR LEFT OUTPUT
M	LEFT SPEAKER ⊖	Z	FRONT LEFT OUTPUT



ANTENNA

FM TUNER 880-1418A

MW/LW TUNER 880-1601A

DC101 DC-DC CONVERTER

IC901 AN6263N

IC801 TA81258N

IC601 μPD7810C

IC102 MC14066BF

IC503 NJM4558M

IC504 NJM4558M

IC502 CXA1037M

IC505 TA8205AH

IC605 TA8180LF

IC205 LA2000

X102 X601 X201 X202 X203 X301 X401

CCT201 10k×8

RN1403 RN1404

VR101 VR102 VR103 VR104 VR201 VR301 VR401 VR501

L501 L502 L503 L504

BPF201

FUSE 10A

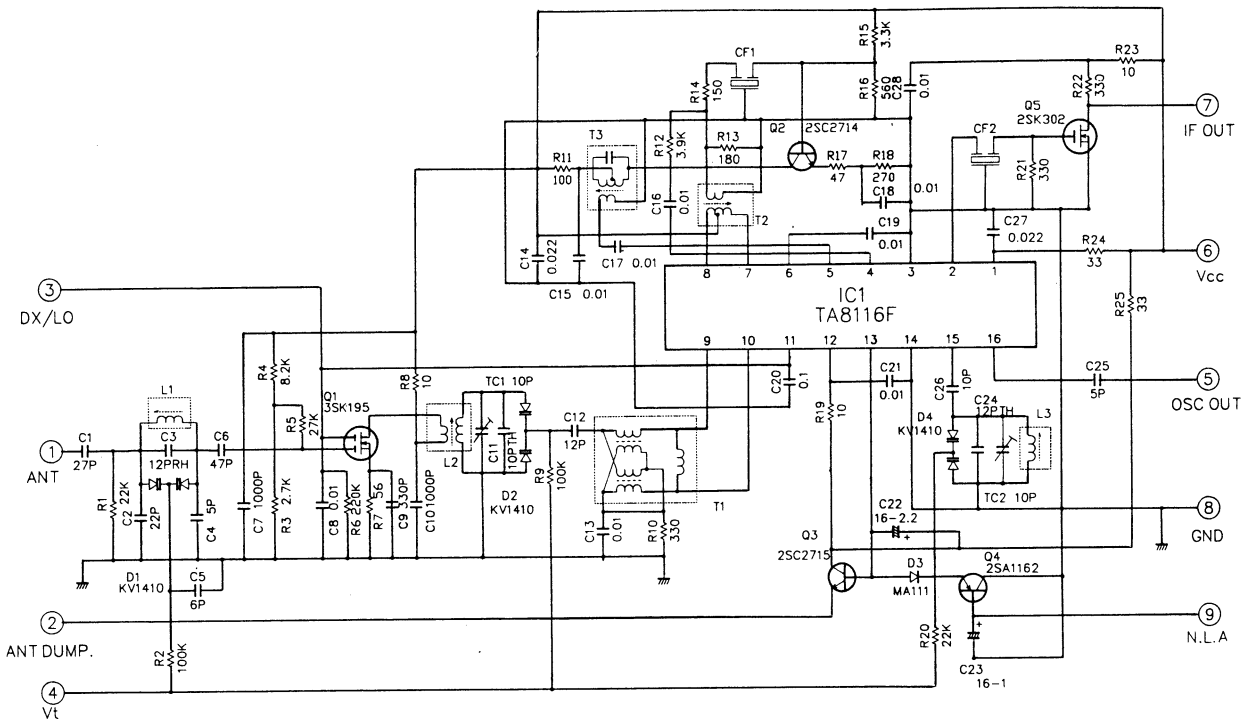
VOL BAL FAD BASS TREB LOUD SW

076-0368-06 076-0388-06 076-0898-06 076-0390-16

074-0731-32 074-0898-06

854-2072-00 854-2073-00 854-1893-00 854-1891-00 854-2068-00 854-2123-01 854-2081-00 854-2070-00 854-2069-00 854-1898-00 854-1889-00

■FM TUNER PACK: 880-1418A



■MW/LW TUNER PACK: 880-1601A